MONTHLY EFFECTIVENESS MONITORING

OCTOBER, NOVEMBER AND DECEMBER, 2010

CHEMSOL, INC. SITE
PISCATAWAY, NEW JERSEY

Prepared for
de maximis
Clinton, New Jersey
January 2011

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Project 090402

430001

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1 INTRODUCTION

The Chemsol, Inc. Site (Site) is located in Piscataway, New Jersey. An interim remedial measure consisting of a groundwater extraction and treatment system began operation in September 1994. This includes the pumping of contaminated groundwater from one well (C-1) at a typical rate ranging between 20 to 30 gpm.

1.1 Monitoring Program

An "Effectiveness Monitoring" program has been conducted since the initiation of system operation. The effectiveness monitoring program is intended to provide an evaluation of the extent of hydraulic control by the current groundwater extraction system within the underlying aquifers downgradient to the Site boundary. The program consists of the collection and reporting of water level data from wells and piezometers located on and around the site. With the exception of location TW-15R, the data are collected monthly and reported quarterly. Since December 2001, Parkway Plastics has refused access to TW-15R. The Effectiveness Monitoring program was initially performed by McLaren/Hart Environmental Engineering Corporation. Eckenfelder Inc., which was subsequently acquired by Brown and Caldwell (BC), conducted the Effectiveness Monitoring program from July 1996 through August 2003 and HydroQual Inc. continued this work from September 2003 until June 2010. The work is currently being conducted by Cornerstone Environmental Group, LLC under direction of the same individuals previously performing the work for HydroQual as well as BC.

1.2 Hydrogeologic Conditions

A review of the existing hydrogeologic data for the site was conducted by BC to develop a refined conceptual model of the groundwater flow regime. This current understanding represents a revision of the preliminary conceptual model that was presented in previous monitoring reports. The current conceptual model was revised on the basis of a review of the RI Report (CDM, 1996) and further review of previous site investigation data by both McLaren/Hart and AGES Corporation. Due to the complex hydrogeologic conditions underlying the site, this conceptual model may be subject to further revision based on the results of numerical modeling and additional field data that may be obtained in the future.

The current understanding of the hydrogeologic flow regime is briefly stated below. Additional details, including a presentation of additional aquifer test analyses, are presented in a separate document titled "Technical Review of the Remedial Investigation Report, Chemsol Superfund Site" (ECKENFELDER INC., April 1997).

The site is conceptually subdivided into six units. This has been primarily accomplished on the basis of site stratigraphy and the observed aquifer response to the various pump tests that have been performed at the site. The hydrostratigraphic units are depicted on Figure 1, and are described briefly, as follows:

- Overburden Water-Bearing Zone – represents the uppermost water-bearing unit at the site and is contained within the composite unit represented by the thin overburden soils and the upper veneer of weather bedrock.

- Upper Bedrock Zone – is represented by the bedrock below the overburden zone. Considerable vertical head loss is observed within this unit downward to the underlying Upper Permeable Aquifer.

- Upper Permeable Aquifer – is comprised of a permeable bedrock zone located between the Upper Bedrock and the Upper Gray Shale.

- Upper Gray Shale (Aquitard) – is relatively low permeability zone between the upper permeable aquifer and the Principal Aquifer.

- Principal Aquifer – is comprised of the bedrock zone between the upper and deep gray shale beds with a thickness of approximately 180 ft. Slight downward gradients are observed within the Principal Aquifer and it has been subdivided into an upper and lower portion for mapping purposes. In addition, wells screened in the contiguous Upper Gray Shale and Deep Gray Shale aquitards have been observed to be in hydraulic communication with the Principal Aquifer and are included in the potentiometric mapping of this unit.

- Deep Bedrock Unit – includes the bedrock below the Deep Gray Shale. The deep gray shale provides some hydraulic separation between the Principal aquifer and the deep bedrock.

Plan-view potentiometric maps (Figures 2 through 5) have been prepared that depict static (non-pumping) conditions using data obtained on July 20, 1999. These data were obtained following a system shut-down and after allowing the water levels to recover to static conditions over a period of a couple weeks. Maps are presented for the hydrostratigraphic zones in which horizontal flow predominates including the Overburden zone, Upper Permeable aquifer, and the upper and lower portions of the Principal Aquifer.

The predominant direction of horizontal groundwater flow prior to pumping in each of the zones is shown to be northward. This is somewhat different than the directions of groundwater flow that have been defined by CDM in the 1996 RI report. The differences between the current conceptual model and the RI report are described in additional detail in the document titled "Technical Review of the Remedial Investigation Report, Chemsol Superfund Site" (ECKENFELDER INC., April 1997).

2 EFFECTIVENESS MONITORING

Groundwater level data was collected in October and December, 2010 from accessible Site monitoring wells and piezometers. Data was not collected in November as the interim extraction system was shut down to allow for treatment plant upgrades required for the site wide groundwater extraction and treatment system (final remedy). Depth to water measurements were made from a surveyed reference point on the top of the well riser/casing using an electronic water level indicator. Measurements in the pumping well C-1 were made using a transducer which is read at the control panel. The data were converted to elevations relative to the site monument (which is referenced to mean sea level) and tabulated, as presented in Table 1.

The monthly groundwater level data have been graphically presented in order to depict the direction and magnitude of horizontal and vertical groundwater flow. This has been achieved through the preparation of a potentiometric surface map and two hydrogeologic cross-sections for the data obtained each month (Figures 6 - 11). The potentiometric surface contour map is constructed using wells installed in the Upper Principal aquifer. The current distribution of monitoring wells at the site does not permit the evaluation of lateral hydraulic capture in the other aquifer zones, including the Upper Permeable and the Lower Principal aquifer. Accordingly, two perpendicular hydrogeologic cross-sections that depict vertical relationships of groundwater flow have been prepared as a supplement to each plan view map.

Hydraulic capture is achieved over much of the site as a result of pumping from well C-1. This includes the former production area and the area upgradient (south) of the Site toward the railroad tracks. The hydrogeologic cross-sections reveal that capture is also typically achieved from the deep bedrock unit located below the deep shale. The extent of capture in the downgradient direction approaches the northern property line. However, the exact position of the zone of capture is uncertain due to the lack of monitoring points, particularly in the area between the pumping well C-1 and the northern property line.

USEPA previously established effectiveness criteria for the groundwater extraction system based on the CDM understanding of the site hydrogeologic conditions that is now subject to revision. Basically, the system was considered to be effective when the groundwater flow directions are observed to be toward the pumping well (C-1) from monitoring wells located on the south side of the site, including wells C-3, C-4, C-5, TW-6, TW-8, and TW-9. It is now known that flow from these wells does not represent a flow reversal but is actually in the direction of natural groundwater flow. For the time being, however, the flow from these wells will continue to be evaluated using existing USEPA criteria (Section 3.0), pending further discussion with the USEPA.

3 GRADIENT CALCULATIONS

Horizontal hydraulic gradients at wells TW-6, TW-8, TW-9, C-3, and C-4 were calculated using the methodology required by the USEPA. Gradients are typically calculated using the following formula:

$$\frac{H_1 - H_2}{L}$$

Where: H_1 and H_2 = the groundwater elevations or head at two points (ft)

L = lateral distance between each point (ft)

The methodology used for this site assumes that H1 and H2 are equal to the groundwater elevation of a particular monitoring well and that of C-5, respectively. L is equal to the distance from the monitoring well to an arc that passes through C-5 and with a radius that is equal to the distance from C-1 to C-5. Thus, positive gradients indicate groundwater flow from the monitoring well toward C-5 and subsequently the pumping well C-1. Negative gradients indicate groundwater flow from C-5 toward the monitoring well and subsequently off site. The distances of each well (L) to C-5 are listed below.

- TW-6 = 50 feet
- TW-8 = 210 feet
- TW-9 = 250 feet
- C-3 = 270 feet
- C-4 = 180 feet

Positive gradients were observed with respect to Well C-5 at all wells in October and December. The summary of gradient calculations is included as Table 2.

4 SUMMARY AND CONCLUSIONS

Hydraulic capture is achieved by well C-1 within the central and southerly portions of the Site, including a limited portion of the deep bedrock zone. This is illustrated by each of the potentiometric contour maps and the hydrogeologic cross-sections.

Drawdown in the pumping well (C-1) was evaluated using an aquifer transmissivity of 12,700 gallons per day per foot. This is the average transmissivity of the principal aquifer as determined by quantitative analyses presented in the "Technical Review of the Remedial Investigation Report". This evaluation indicates an average well efficiency of three percent (3.13%) for October and December. The observed efficiency is comparable to that estimated during the previous three quarters (2.91%, 2.81%, and 2.83%, respectively).

This represents the final interim effectiveness monitoring report as the final remedy will be operational effective January 25, 2011. System monitoring from this point forward will be conducted in accordance with the Long Term Monitoring Plan (LTMP), January 2011, associated with the final remedy.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
CHEMSOL INC., SITE
PISCATAWAY, NEW JERSEY

Well[(a)]	Reference Elevation (ft., msl)	Zone[a]	7-Oct-10		11//2010		29-Dec-10	
			DTW (ft.)	Elev. (ft., msl)	DTW (ft.)	Elev. (ft., msl)	DTW (ft.)	Elev. (ft., msl)
C-1*	79.83	3/4	21.3	-37.47			36	-22.77
C-2	86.24	5	28.74	57.50			27.93	58.31
C-3	80.52	4	23.37	57.15			21.68	58.84
C-4	80.96	4	23.51	57.45			22.19	58.77
C-5	80.10	4	23.37	56.73			22.05	58.05
C-6	76.12	3	18.01	58.11			16.2	59.92
C-7	80.20	3	21.89	58.31			20.23	59.97
C-8	81.40	3	23.28	58.12			21.33	60.07
C-9	85.33	3	26.9	58.43			25.21	60.12
C-10	80.71	3	22.37	58.34			21.08	59.63
DMW-1	85.40	5	27.61	57.79			26.5	58.90
DMW-2	85.07	6	27.27	57.80			25.98	59.09
DMW-3	80.49	6	22.67	57.82			21.23	59.26
DMW-4	80.44	6	22.82	57.62			21.29	59.15
DMW-5	78.89	5	21.42	57.47			20.17	58.72
DMW-6	79.23	5	21.68	57.55			20.34	58.89
DMW-7	76.62	5	19.27	57.35			18.04	58.58
DMW-8	77.77	6	20.38	57.39			19.16	58.61
DMW-9	76.35	4	19.42	56.93			17.75	58.60
DMW-10	79.58	4	22.81	56.77			20.89	58.69
DMW-11	85.04	5	27.51	57.53			26.47	58.57
EX-1UP	80.81	3	23.76	57.05			22.68	58.13
EX-2P	78.05	4/5	21.27	56.78			20.44	57.61
EX-3L	80.91	6	23.52	57.39			22.45	58.46
MW-101	79.80	6	22.4	57.40			21.61	58.19
MW-102	78.69	6	15.98	62.71			19.7	58.99
MW-103	81.09	5	23.42	57.67			22.31	58.78
MW-104	88.58	6	NM	NM			NM	NM
OW-1	78.37	1	9.89	68.48			10.36	68.01
OW-2	81.64	1	NM	NM			NM	NM
OW-4	79.96	1	NM	NM			NM	NM
OW-10	79.06	1	3.6	75.46			2.12	76.94
OW-11	75.08	1	5.53	69.55			7.16	67.92
OW-12	84.65	1	NM	NM			NM	NM
OW-13	82.96	1	NM	NM			NM	NM
OW-14	92.14	1	NM	NM			NM	NM
OW-15	75.08	1	4.61	70.47			5.98	69.10
PZ 1	76.62	1	?	NM			?	NM
PZ 1D	77.05	1	?	NM			?	NM
PZ 2	76.45	1	2.07	74.38			1.87	74.58
PZ 2D	75.94	1	9.24	66.70			9.07	66.87
PZ 3	78.65	1	NM	NM			NM	NM
PZ 4	78.03	1	5.11	72.92			4.89	73.14
PZ 4D	78.25	1	5.42	72.83			5.07	73.18

System shut down for Treatment Plant Upgrades

TABLE 1
GROUNDWATER ELEVATIONS
CHEMSOL INC., SITE
PISCATAWAY, NEW JERSEY

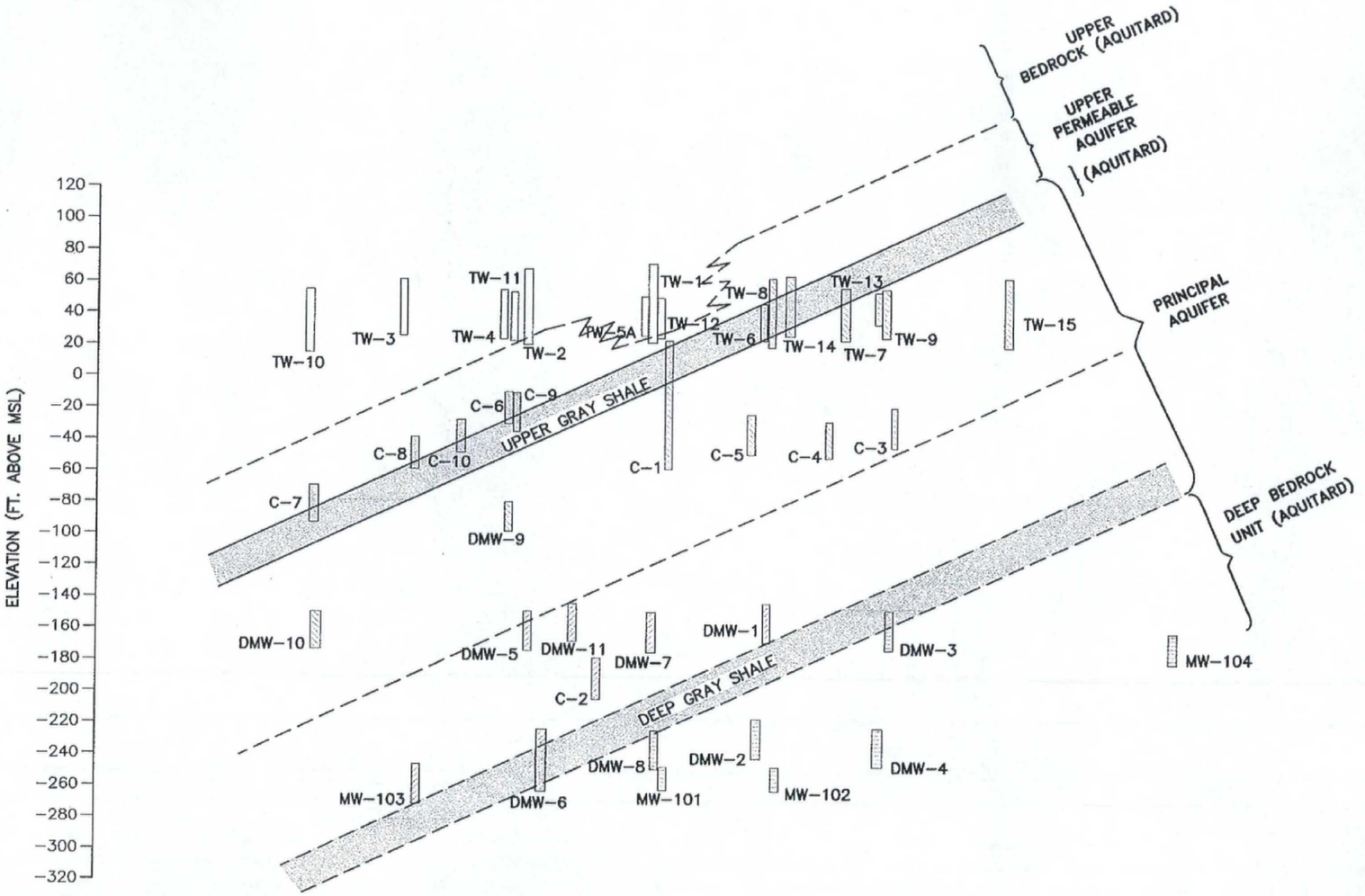
Well[a]	Reference Elevation (ft., msl)	Zone[a]	7-Oct-10 DTW (ft.)	7-Oct-10 Elev. (ft., msl)	11//2010 DTW (ft.)	11//2010 Elev. (ft., msl)	29-Dec-10 DTW (ft.)	29-Dec-10 Elev. (ft., msl)
PZ 5	76.68	1	5.71	70.97			5.23	71.45
PZ 5D	76.86	1	11.04	65.82			10.39	66.47
PZ 6	76.15	1	12.24	63.91	System shut down for Treatment Plant Upgrades		11.12	65.03
PZ 6D	76.14	1	NM	NM			NM	NM
PZ 7	75.71	1	9.87	65.84			9.09	66.62
PZ 8	77.57	1	NM	NM			NM	NM
PZ 8D	77.51	1	5.6	71.91			5.02	72.49
PZ 9D	75.98	1	11.32	64.66			10.64	65.34
PZ 10D	79.08	1	NM	NM			NM	NM
SG@PZ 4	71.67	1	NM	NM			NM	NM
SG@PZ 8	73.95	1	NM	NM			NM	NM
TW-1	90.15	2	31.6	58.55			29.94	60.21
TW-2	85.81	2	19.19	66.62			17.82	67.99
TW-3	81.59	2	23.79	57.80			21.85	59.74
TW-4	78.31	2	19.11	59.20			17.68	60.63
TW-5	76.24	2	14.44	61.80			12.41	63.83
TW-5A	75.98	2	14.82	61.16			12.84	63.14
TW-6	78.88	4	16.11	62.77			17.76	61.12
TW-7	80.16	4	19.27	60.89			18.44	61.72
TW-8	85.11	4	27.25	57.86			25.81	59.30
TW-9	80.29	4	22.91	57.38			21.25	59.04
TW-10	79.96	2	17.62	62.34			15.9	64.06
TW-11	75.76	2	9.81	65.95			8.44	67.32
TW-12	75.73	2	11.91	63.82			9.71	66.02
TW-13	78.17	4	19.21	58.96			17.45	60.72
TW-14	89.23	4	29.31	59.92			26.2	63.03
TW-15	82.90	4	NM	NM			NM	NM
TW-15R[c] [d]	81.40	4	NM	NM			NM	NM
MW-201L	80.56	6	23.41	57.15			21.85	58.71
MW-202L	76.96	6	19.64	57.32			18.04	58.92
MW-203UP	77.91	3	19.79	58.12			18.1	59.81
MW-203P	78.70	4/5	21.73	56.97			20.08	58.62
MW-203L	78.90	6	21.7	57.20			20.03	58.87
MW-204UP	75.88	3	15.11	60.77			13.2	62.68
MW-204P	75.87	4/5	18.58	57.29			17.15	58.72
MW-204L	76.00	6	18.62	57.38			17.11	58.89
MW-205UP	84.40	3	22.32	62.08			24.49	59.91
MW-205P	85.12	4/5	27.68	57.44			26.31	58.81
MW-206P	74.98	4/5	18.31	56.67			16.7	58.28
MW-207UP	79.01	3	20.99	58.02			19.16	59.85
MW-208UP	76.93	3	18.74	58.19			16.92	60.01
C-1P	79.44	4/5	22.47	56.97			20.57	58.87
*C-1 Pumping Rate (gpm):			19				22.56	

TABLE 2
GRADIENT CALCULATIONS
CHEMSOL INC. SITE
PISCATAWAY, NEW JERSEY

7-Oct-10		11//2010		29-Dec-10	
Groundwater Elevation (ft, msl)	Hydraulic Gradient	Groundwater Elevation (ft, msl)	Hydraulic Gradient	Groundwater Elevation (ft, msl)	Hydraulic Gradient
56.73	--	NA - System shut down for Treatment Plant Upgrades		58.05	--
62.77	1.2E-01			61.12	6.1E-02
57.86	5.4E-03			59.3	6.0E-03
57.38	2.6E-03			59.04	4.0E-03
57.15	1.6E-03			58.84	2.9E-03
57.45	4.0E-03			58.77	4.0E-03

Note:
Positive gradients indicate groundwater flow toward extraction well C-1.

FIGURES



LEGEND:

- WELLS SCREENED IN UPPER BEDROCK AQUITARD (NOT USED FOR PLAN VIEW POTENTIOMETRIC MAPPING)
- WELLS SCREENED IN THE UPPER PERMEABLE AQUIFER
- WELLS SCREENED IN THE UPPER PRINCIPAL AQUIFER
- WELLS SCREENED IN THE LOWER PRINCIPAL AQUIFER
- WELLS SCREENED IN THE DEEP BEDROCK UNIT (NOT USED FOR PLAN VIEW POTENTIOMETRIC MAPPING)

NOTES:

1. CONCEPTUAL CROSS-SECTION REPRESENTING ALL BEDROCK WELLS PROJECTED TO A CONCEPTUAL ORIENTATION, ALLIGNED PARALLEL TO DIP.
2. ADAPTED FROM RI FIG. 3-3, (CDM,1996)
3. ASSIGNMENT OF WELLS TO VARIOUS HYDRO STRATIGRAPHIC UNITS IS BASED LARGELY ON OBSERVED RESPONSES TO PUMPING.

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

PROJECTED BEDROCK CROSS SECTION

FIGURE NO. 1

PROJECT NO. 090402

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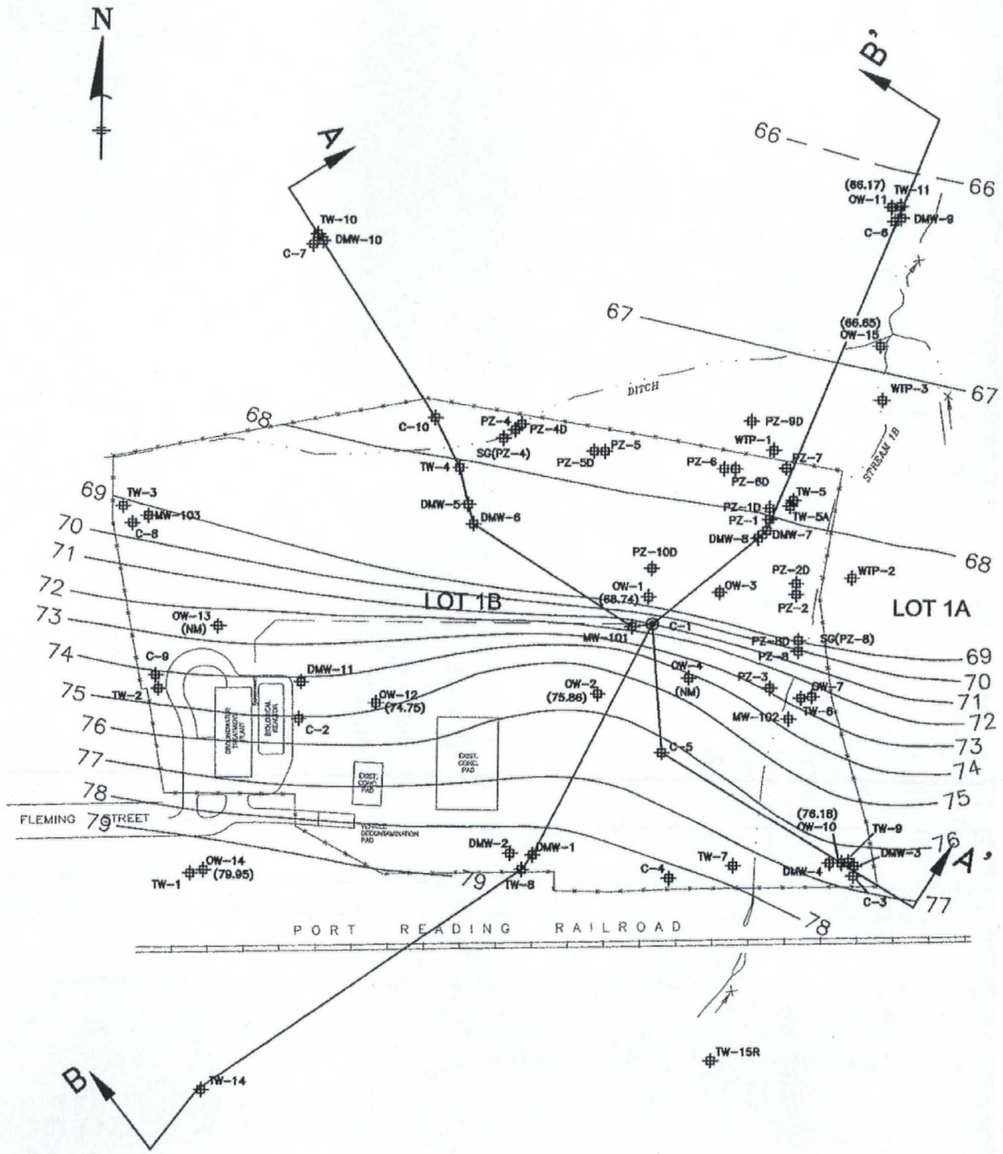

LEGEND:

- TW-9 — MONITORING WELL
- C-1 — IRM PUMPING WELL
- (66.65) — MEASURED WATER ELEVATION
- 72 — POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- FENCE
- RAILROAD
- INFLUENT PIPELINE
- STREAM
- CROSS–SECTION ORIENTATION

200 0 200 400
scale feet

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY
POTENTIOMETRIC CONTOUR MAP OF STATIC CONDITIONS OVERBURDEN WATER-BEARING ZONE (OW-WELLS)
JULY 20, 1999

FIGURE NO. **2**
PROJECT NO. 090402

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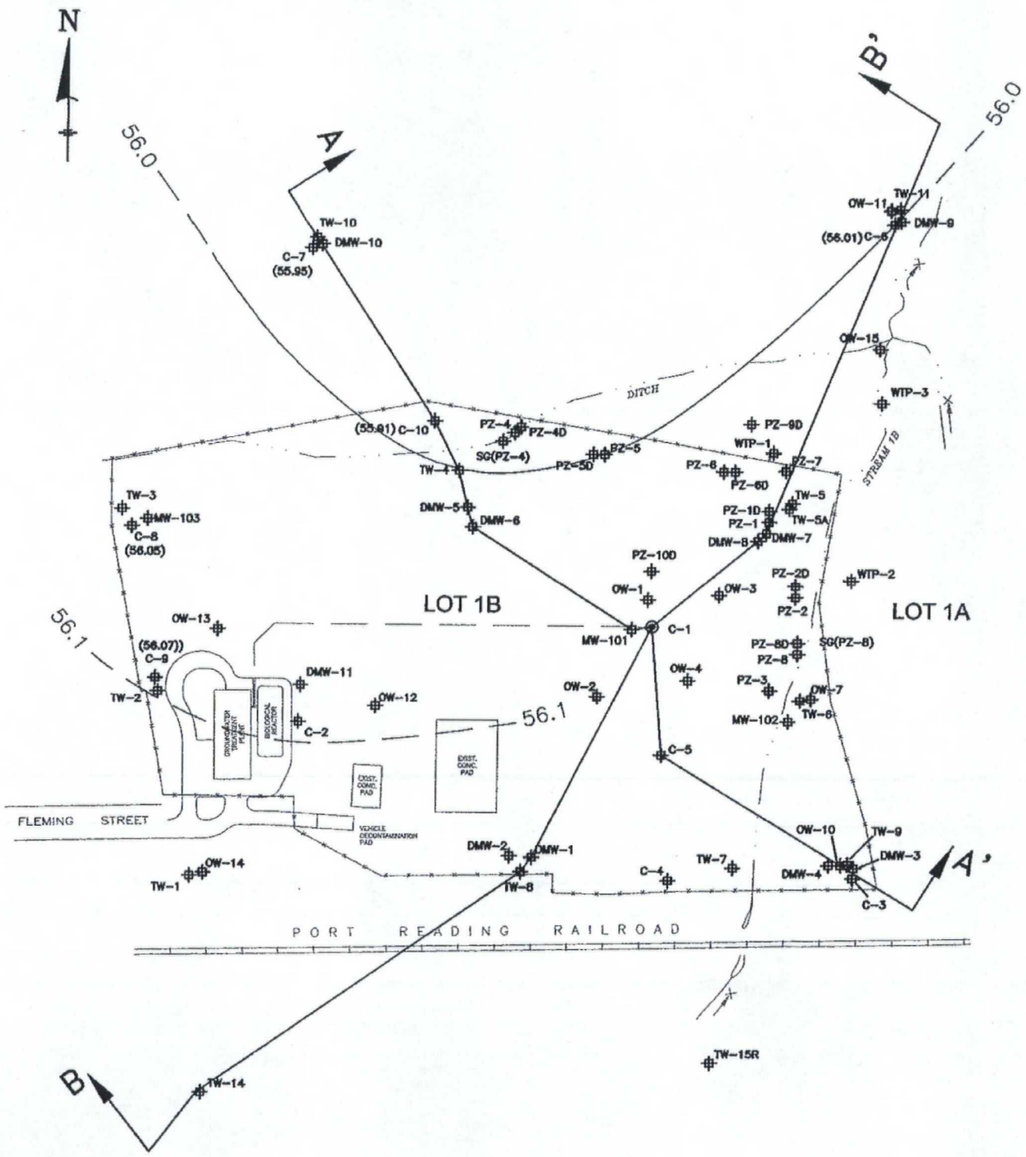

LEGEND:

- TW-8 — MONITORING WELL
- C-1 — IRM PUMPING WELL
- (55.95) — MEASURED WATER ELEVATION
- —56.0— POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- FENCE
- RAILROAD
- INFLUENT PIPELINE
- STREAM
- CROSS-SECTION ORIENTATION

200 0 200 400
scale feet

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY
POTENTIOMETRIC CONTOUR MAP OF STATIC CONDITIONS UPPER PERMEABLE AQUIFER
JULY 20, 1999

FIGURE NO. **3**
PROJECT NO. 090402

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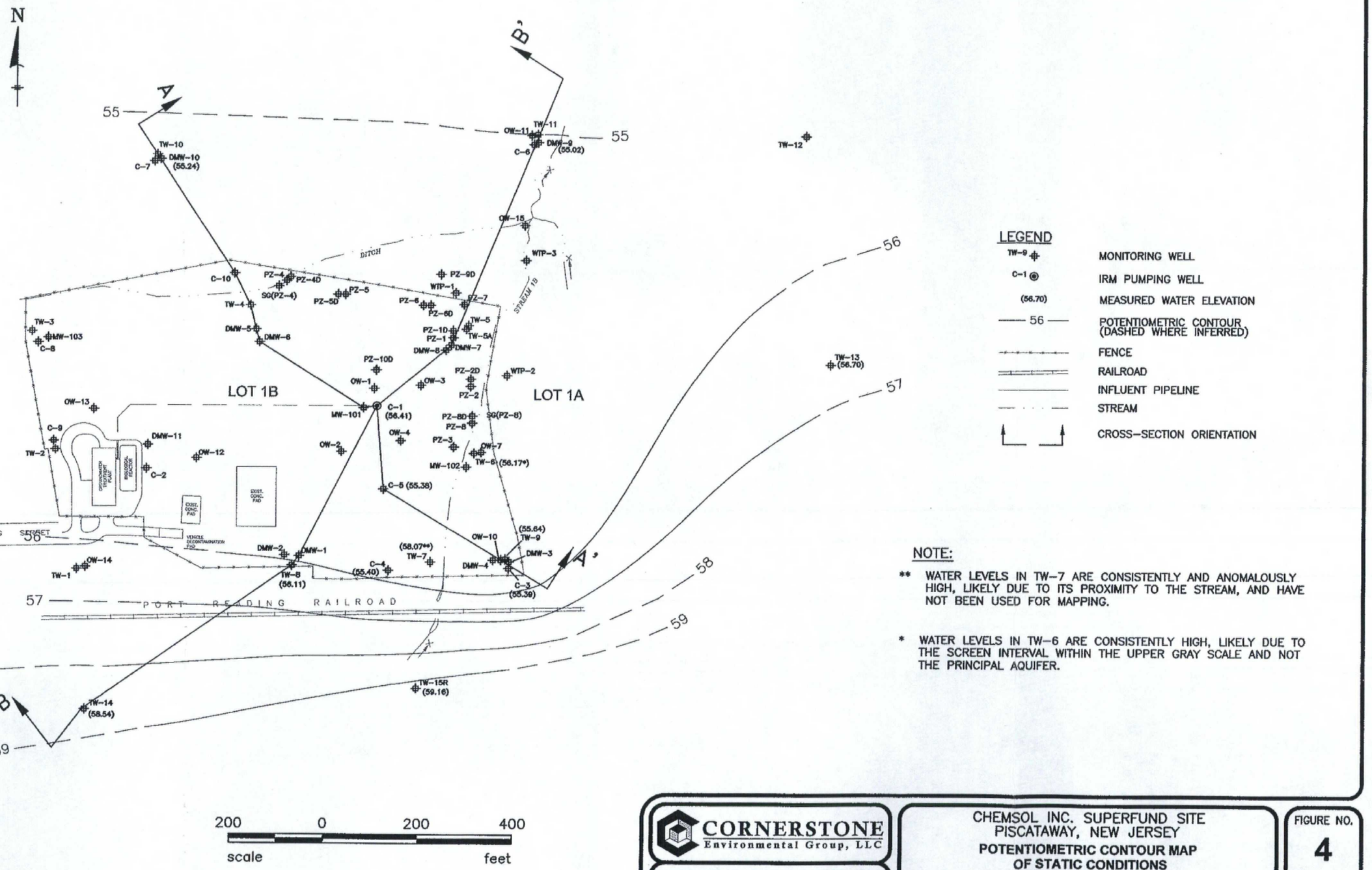

LEGEND

- TW-9 — MONITORING WELL
- C-1 — IRM PUMPING WELL
- (56.70) — MEASURED WATER ELEVATION
- 56 — POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- FENCE
- RAILROAD
- INFLUENT PIPELINE
- STREAM
- CROSS-SECTION ORIENTATION

NOTE:

** WATER LEVELS IN TW-7 ARE CONSISTENTLY AND ANOMALOUSLY HIGH, LIKELY DUE TO ITS PROXIMITY TO THE STREAM, AND HAVE NOT BEEN USED FOR MAPPING.

* WATER LEVELS IN TW-6 ARE CONSISTENTLY HIGH, LIKELY DUE TO THE SCREEN INTERVAL WITHIN THE UPPER GRAY SCALE AND NOT THE PRINCIPAL AQUIFER.

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY
POTENTIOMETRIC CONTOUR MAP OF STATIC CONDITIONS UPPER PRINCIPAL AQUIFER
JULY 20, 1999

FIGURE NO. **4**

PROJECT NO. 090402

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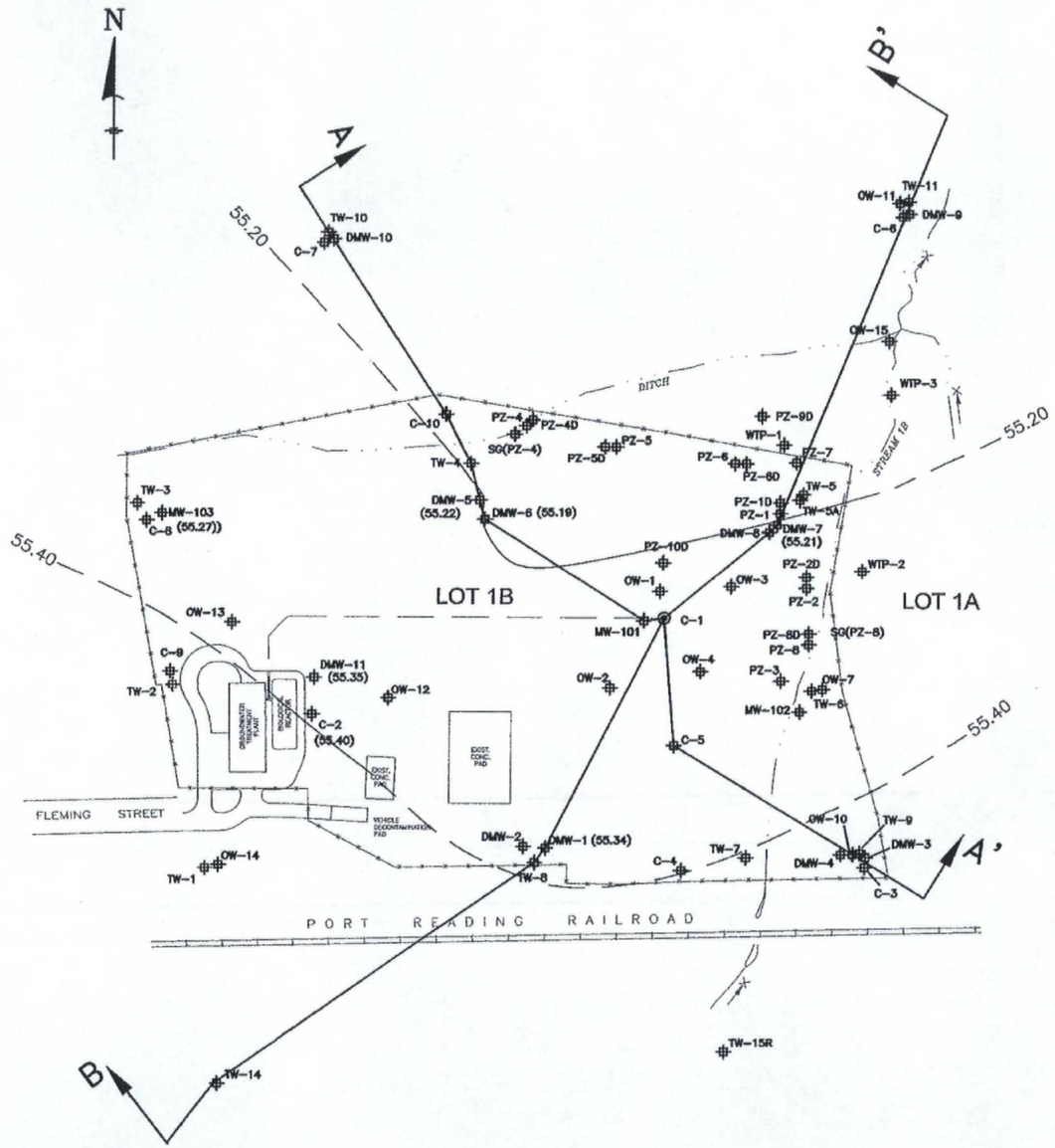

200 0 200 400

scale feet

LEGEND

- TW-9 — MONITORING WELL
- C-1 — IRM PUMPING WELL
- (55.27) — MEASURED WATER ELEVATION
- —55.40— POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- FENCE
- RAILROAD
- INFLUENT PIPELINE
- STREAM
- CROSS–SECTION ORIENTATION

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY
POTENTIOMETRIC CONTOUR MAP OF STATIC CONDITIONS LOWER PRINCIPAL AQUIFER
JULY 20, 1999

FIGURE NO. **5**

PROJECT NO. 090402

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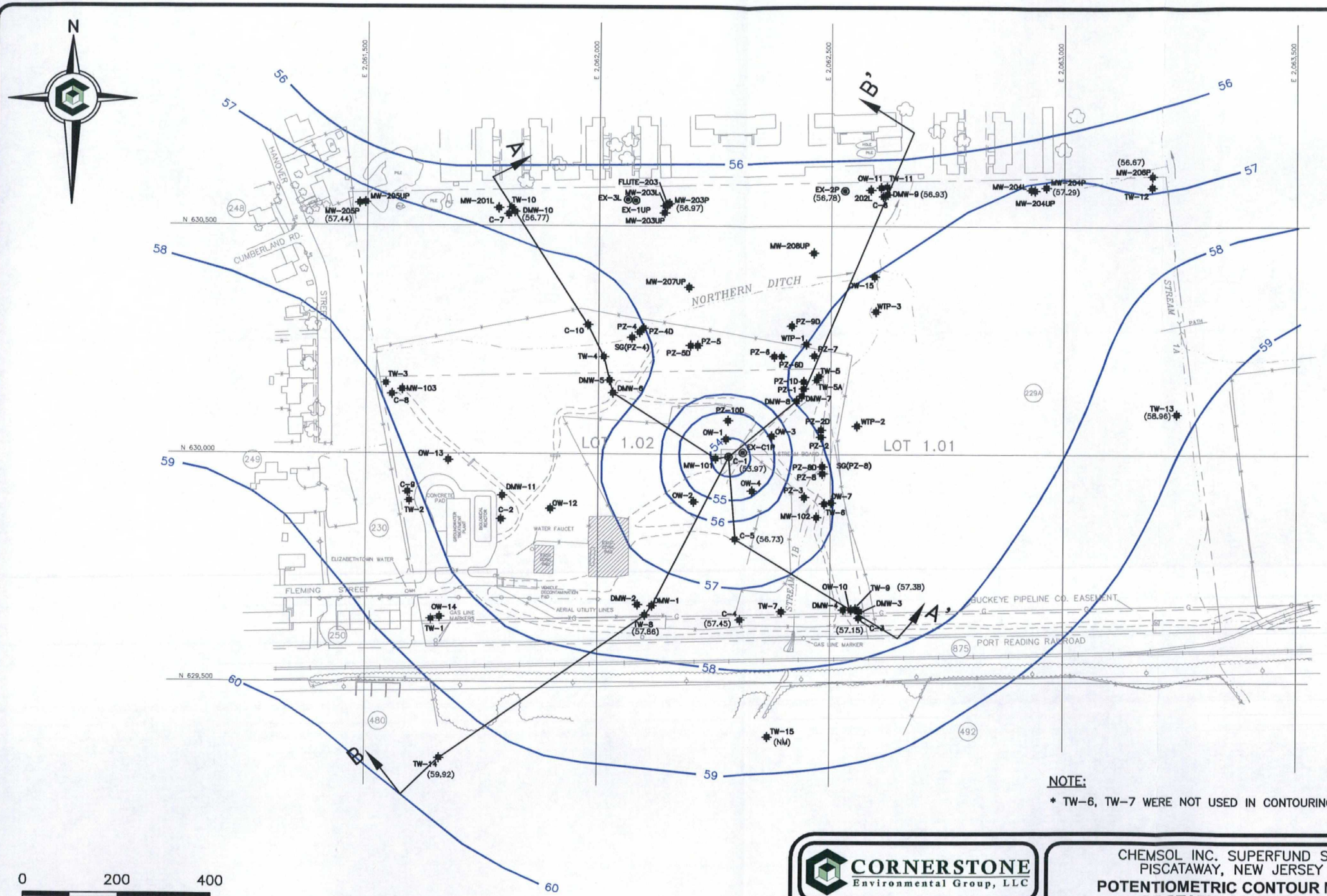

NOTE:

* TW-6, TW-7 WERE NOT USED IN CONTOURING

0 200 400

SCALE IN FEET

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

POTENTIOMETRIC CONTOUR MAP OF STATIC CONDITIONS UPPER PRINCIPAL AQUIFER OCTOBER 7, 2010

FIGURE NO. 6

PROJECT NO. 090402

File: X:\PROJECTS\DEMAXIMIS\090402 - CHEMSOL QUARTERLY REPORT_PROJECT FILES\4thQtr2010\Project Drawings\Fig 6-100710.dwg Layout: FIGURE 6 User: larisa.chizhov Jan 17, 2011 - 11:34am

A

A'

GENERALIZED GROUND SURFACE

OVERBURDEN WATER-BEARING ZONE

UPPER BEDROCK AQUITARD

UPPER PERMEABLE AQUIFER

UPPER GRAY SHALE

PRINCIPAL AQUIFER

LOWER GRAY SHALE

DEEP BEDROCK UNIT

TW-10 (62.34)

TW-4 (59.20)

C-10 (58.34)

C-7 (58.31)

DMW-10 (56.77)

DMW-5 (57.47)

DMW-6 (57.55)

MW-101 (57.40)

C-1 (53.97)

C-5 (56.73)

OW-10 (75.46)

TW-9 (57.38)

C-3 (57.15)

DMW-3 (57.82)

DMW-4 (57.62)

62 61 60 59 58 57 56 55 54 54 55 56 57 57 58

80 60 40 20 0 -20 -40 -60 -80 -100 -120 -140 -160 -180 -200 -220 -240 -260

EXACT POSITION OF DOWNGRADIENT STAGNATION POINT IS UNCERTAIN

LEGEND:

AQUITARD

(62.09) MEASURED WATER LEVEL ELEVATION

—60— EQUIPOTENTIAL LINE

NOTE:

* CALCULATED HEAD BASED ON 21.3 GPM PUMPING RATE AND MEASURED AQUIFER TRANSMISSIVITY.

0 100 200

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 2.5X

CORNERSTONE Environmental Group, LLC

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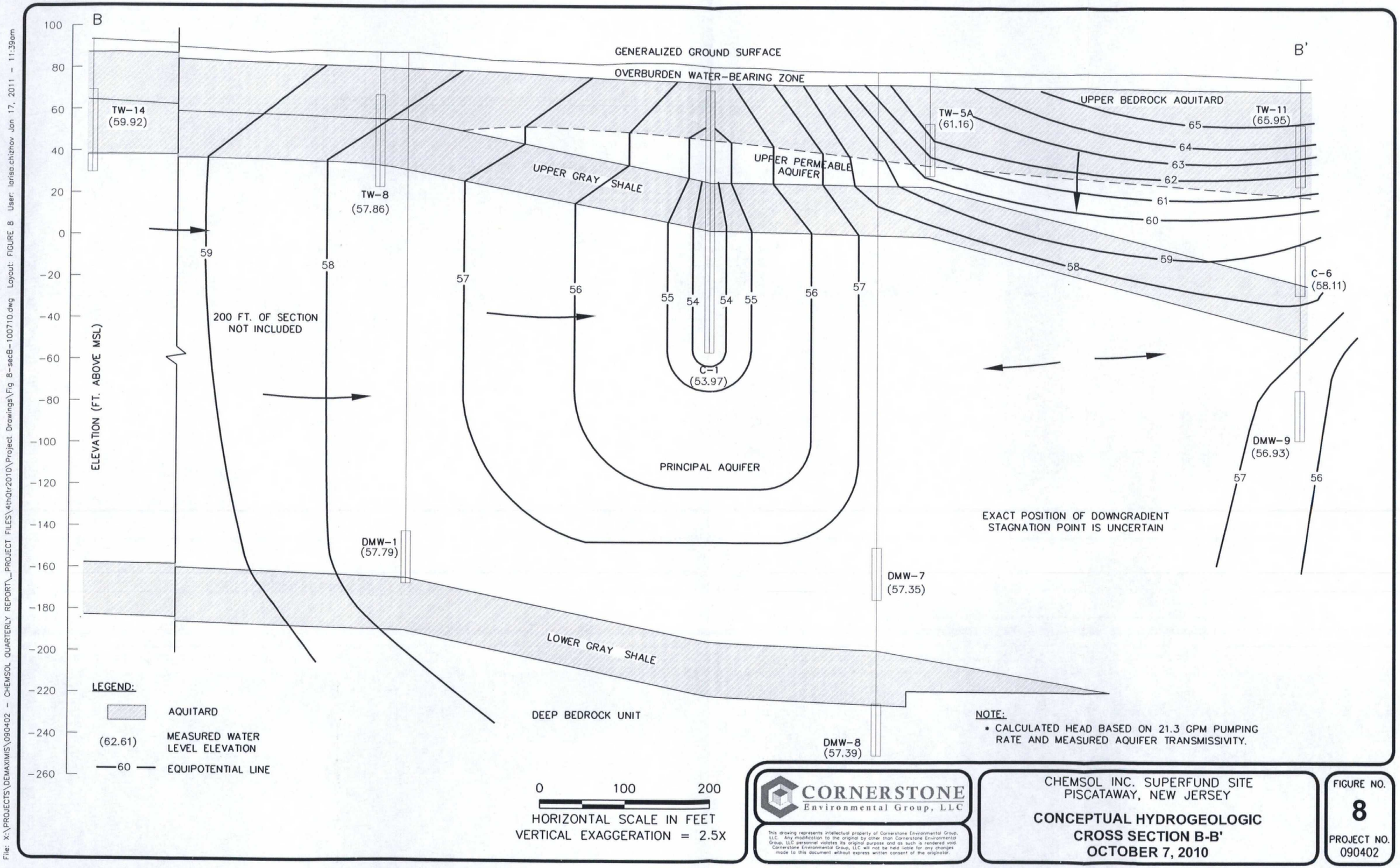
CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

CONCEPTUAL HYDROGEOLOGIC CROSS SECTION A-A'
OCTOBER 7, 2010

FIGURE NO. **7**

PROJECT NO. 090402

File: X:\PROJECTS\DEMAXIMIS\090402 - CHEMSOL QUARTERLY REPORT_PROJECT FILES\4thQtr2010\Project Drawings\Fig /-secA-10U/1U.dwg Layout: FIGURE / User: larisa.chizhov Jan 17, 2011 - 11:57am



NOTE:
- CALCULATED HEAD BASED ON 21.3 GPM PUMPING RATE AND MEASURED AQUIFER TRANSMISSIVITY.

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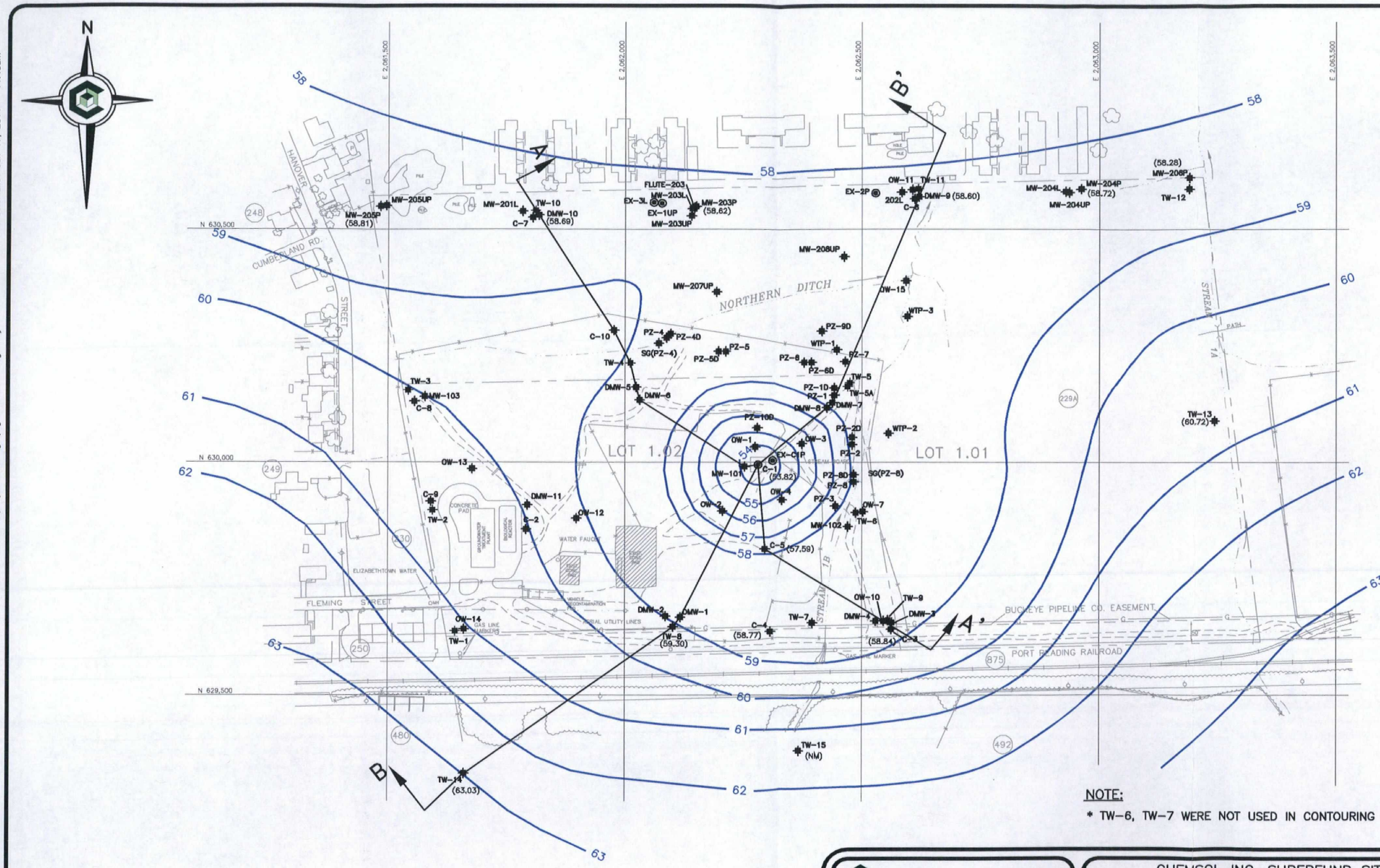
CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

CONCEPTUAL HYDROGEOLOGIC CROSS SECTION B-B'
OCTOBER 7, 2010

FIGURE NO. **8**
PROJECT NO. 090402

File: X:\PROJECTS\DEMAXIMIS\090402 - CHEMSOL QUARTERLY REPORT_PROJECT FILES\4thQtr2010\Project Drawings\Fig 8-secB-100710.dwg Layout: FIGURE 8 User: larisa.chizhov Jan 17, 2011 - 11:39am



NOTE:

* TW-6, TW-7 WERE NOT USED IN CONTOURING

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

POTENTIOMETRIC CONTOUR MAP OF STATIC CONDITIONS UPPER PRINCIPAL AQUIFER DECEMBER 29, 2010

FIGURE NO. **9**

PROJECT NO. 090402

File: X:\PROJECTS\DEMAXIMIS\090402 - CHEMSOL QUARTERLY REPORT_PROJECT FILES\4thQtr2010\Project Drawings\Fig 9-122910.dwg Layout: FIGURE 9 User: larisa.chizhov Jan 17, 2011 - 11:40am

A

A'

GENERALIZED GROUND SURFACE

OVERBURDEN WATER-BEARING ZONE

UPPER BEDROCK AQUITARD

UPPER PERMEABLE AQUIFER

UPPER GRAY SHALE

PRINCIPAL AQUIFER

LOWER GRAY SHALE

DEEP BEDROCK UNIT

TW-10 (64.06)

TW-4 (60.63)

C-10 (59.63)

C-7 (59.97)

C-5 (58.05)

C-1 (53.82)

OW-10 (73.34)

TW-9 (59.04)

C-3 (58.84)

DMW-10 (58.69)

DMW-5 (58.72)

DMW-6 (58.89)

MW-101 (58.19)

DMW-3 (59.23)

DMW-4 (59.15)

64 63 62 61 60 59 58 57 56 55 54 54 55 56 57 58 59 59 59

80 60 40 20 0 -20 -40 -60 -80 -100 -120 -140 -160 -180 -200 -220 -240 -260

EXACT POSITION OF DOWNGRADIENT STAGNATION POINT IS UNCERTAIN

LEGEND:

AQUITARD

(62.09) MEASURED WATER LEVEL ELEVATION

—60— EQUIPOTENTIAL LINE

NOTE:

* CALCULATED HEAD BASED ON 22.5 GPM PUMPING RATE AND MEASURED AQUIFER TRANSMISSIVITY.

0 100 200

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 2.5X

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

CONCEPTUAL HYDROGEOLOGIC CROSS SECTION A-A'
DECEMBER 29, 2010

FIGURE NO. **10**

PROJECT NO. 090402

File: X:\PROJECTS\DEMAXIMIS\090402 - CHEMSOL QUARTERLY REPORT_PROJECT FILES\4thQtr2010\Project Drawings\Fig10-secA-122910.dwg Layout: FIGURE 10 User: lorisa.chizhov Jan 17, 2011 - 11:42am

B

B'

GENERALIZED GROUND SURFACE

OVERBURDEN WATER-BEARING ZONE

UPPER BEDROCK AQUITARD

UPPER GRAY SHALE

UPPER PERMEABLE AQUIFER

PRINCIPAL AQUIFER

LOWER GRAY SHALE

DEEP BEDROCK UNIT

TW-14 (63.03)

TW-8 (59.30)

TW-5A (63.14)

TW-11 (67.32)

C-1 (53.82)

C-6 (59.92)

DMW-1 (58.90)

DMW-7 (58.58)

DMW-8 (58.61)

DMW-9 (58.60)

200 FT. OF SECTION NOT INCLUDED

EXACT POSITION OF DOWNGRADIENT STAGNATION POINT IS UNCERTAIN

ELEVATION (FT. ABOVE MSL)

100 80 60 40 20 0 -20 -40 -60 -80 -100 -120 -140 -160 -180 -200 -220 -240 -260

63 62 61 60 59 58 57 56 55 54 54 55 56 57 58

67 66 65 64 63 62 61 60 59

58

LEGEND:

AQUITARD

(62.61) MEASURED WATER LEVEL ELEVATION

—60— EQUIPOTENTIAL LINE

0 100 200

HORIZONTAL SCALE IN FEET

VERTICAL EXAGGERATION = 2.5X

NOTE:

- CALCULATED HEAD BASED ON 22.5 GPM PUMPING RATE AND MEASURED AQUIFER TRANSMISSIVITY.

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CHEMSOL INC. SUPERFUND SITE
PISCATAWAY, NEW JERSEY

CONCEPTUAL HYDROGEOLOGIC CROSS SECTION B-B'
DECEMBER 29, 2010

FIGURE NO. **11**

PROJECT NO. 090402

File: X:\PROJECTS\DEMAXIMIS\090402 - CHEMSOL QUARTERLY REPORT_PROJECT FILES\4thQtr2010\Project Drawings\Fig11-secB-122910.dwg Layout: FIGURE 11 User: larisa.chizhov Jan 17, 2011 - 11:45am